

ON THE IDENTITY OF BELFRAGE^{1,2}Wesley R. Nowell³

ABSTRACT: Belfrage, Texas was cited as the Type locality in a Diptera collection record. Inquiry showed that Belfrage was not a geographical site, but rather the name of an eminent collector who lived in the State of Texas from 1867-1882. He was a prodigious collector who sold thousands of specimens to major museums in Europe and the northeastern United States. It is suggested that this finding be noted on all specimens labeled "Belfrage, Texas," to preclude misinterpretation of the identity of Belfrage.

DESCRIPTORS: Diptera; locality labels; Texas; G.W. Belfrage.

One of the relevant details associated with a new species description is the specimen collection locality. The more precisely it is established, the greater its value for subsequent recovery of the species and historical importance. Therefore, when a type specimen reference exists with a collection record that cannot be traced, the error must be corrected so that the inaccurate datum will not be perpetuated in the literature. Such a problem exists with *Dixa venosa* Loew.

In 1872, Hermann Loew described *Dixa venosa* from a single female specimen. The taxonomic data are followed by the collection note "(Texas; Belfrage)." Osten Sacken (1878), Kertész (1902), Johannsen (1903 and 1923), Aldrich (1905), Edwards (1932), Cooper and Rapp (1944), and Hubert (1965) included *D. venosa* in their catalogs and checklists. In each of these publications the collection locality cited is simply "Texas." Cockerell (1926) and Nowell (1951) referenced *D. venosa* but did not include collection locality data. In 1966, T.M. Peters and E.F. Cook presented the type data as follows: "*Type-locality*. — Belfrage, Texas. *Location of Type*. — ♀. Mus. Comp. Zool. Type no. 10395, Mus. Comp. Zool., Harvard University." This is the first record of the type locality being expanded to include a location within the State of Texas, and Peters (1968) repeated this entry in his paper, *Dixinae Originally Described from North America*.

The addition of "Belfrage" to the type locality was of considerable interest. However, a review of several atlases of Texas communities, past and

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present, did not reveal the name, nor could the Texas State Highway Department confirm its location. The solution to the enigma came from another source.

An entry in *The Handbook of Texas* (1952) states that Gustave W. Belfrage, born in Stockholm, Sweden, immigrated to America in 1859. He began collecting insects while in Chicago, and in January 1867, he went to Texas and continued that work. By the end of 1868, he was selling large exhibits of insects to the Swedish Academy of Science at Stockholm and to other museums, and he maintained this practice until his death in 1882.

Gustave Belfrage was one of the pioneers of American entomology, and the record shows that he contributed extensively in the discovery of specimens new to science. Samuel Geiser devoted an entire chapter to Belfrage in his book, *Naturalists of the Frontier*, and Arnold Mallis (1971) associated him with Ezra T. Cresson as a collector (p. 346). Geiser defined the frontier of scientific exploration as the "boundary between the known area of the earth and the areas that have not yet been scientifically explored." This quotation describes the State of Texas during Belfrage's time. Geiser cites Belfrage's magnificent collections of Texas insects which contributed to Cresson's fine work, *Hymenoptera Texana*, and to several monographs by Professor A.S. Packard.

Belfrage collected skillfully and extensively throughout Texas. His major collecting points were Houston and Tyler in east Texas, and Norse and Clifton in Bosque County near Waco. He also collected in the pine woods of east Texas, along the Mexican border probably at Laredo, and was known to have gone on an expedition into west Texas that lasted two months. From Houston he took up his residence near Norse, a Norwegian community in western Bosque County. Geiser, who visited the area, described the home as overlooking Meridian Creek, and stated that it was in this locality that the naturalist made many of his superb collections. Belfrage is best known for his accumulations of Hymenoptera and Lepidoptera, but being a competent entomologist and thorough collector, representatives of most of the insect orders and a great many families appeared in his collections.

Belfrage was a prodigious collector who sold specimens to augment his inheritance income. The British Museum of Natural History, the Peabody Academy of Science at Salem, and the museums in Brussels, Stockholm and St. Petersburg all have valuable collections of Texan insects acquired from Belfrage. While Belfrage may have kept copious personal notes on the collection points, his specimens were apparently just labeled "Texas." Some more specific data may have been gleaned from his considerable correspondence, but that would have been totally inadequate for the volume of material he collected and sold.

According to Geiser, Belfrage published no entomological papers, but had stated in correspondence that he was working on a paper about the insects of

Bosque County. This manuscript may have contained specific locality data, but it is assumed that it was burned along with his letters by the appraisers of his estate following his death at Norse on December 7, 1882.

On the basis of these findings, Belfrage is not a locality but rather the name of the collector who contributed extensively to the early knowledge of Texas insects. Therefore, labels reading "Texas: Belfrage" or "Texas" followed by "Belfr." on the second line, should be interpreted as collected by G.W. Belfrage in the State of Texas, locality unknown, and this annotation should be applied to each of those thousands of pinned specimens from Texas which grace some of the preminent insect collections in Europe and North America.

Dixa venosa Loew is a valid species and the type specimen is unique. Nothing is known about either its source or its biology. The type locality for *D. venosa* will have to remain simply as "Texas." Only after collectors recover additional specimens of this species can specific collection localities be listed.

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